-- Speaker 0 00:00:04 Make It Right. The manufacturing podcast
Speaker 1 00:00:10 And you choose change. And sometimes it's forced upon you this time. Last year, most people I knew didn't use zoom and some didn't even know what it was now. My friend's 85 year old mother is zooming. And this online communication platform has evolved into a verb in the span of less than 12 months and all because very suddenly we all needed a way to bring our outside world into our home. And zoom is just one very simple example of how important and valuable connectivity is to our world. I'm Janet Eastman. This is the make it right podcast. And this week on the show, we're looking at the industrial internet of things with Greg Orloff, senior analyst, and chief business development officer at IIoT World. Greg, you've been on the show before you always dazzled me with your futuristic stuff. So welcome back to the show. Good to see you.
Speaker 2 00:01:02 Oh, great. To be back, Janet. Thanks. I appreciate it.
Speaker 1 00:01:05 So IOT world is a global digital publication. It's dedicated to connected industry industrial internet of things, industry 4.0. So you bring this great perspective to the show and I'm wondering what you believe has changed forever in the way we live and work because of the COVID-19 pandemic.
Speaker 2 00:01:26 Wow. Is that a big question, Janet? I think, I think, I think a lot of things have changed. Um, there is a new level of uncertainty and I would call it fear, you know, of contracting something that's directly tied to the interaction with others and most likely will never be undone. So, I mean, when I look at it, this to me, that's kind of the proverbial Pandora's box. Uh, but I don't know that it's humans are interesting because we've lived in a fear, a fear of culture, not a fear of culture necessarily, but a culture of fear is probably a better way to put it. Even if you flash back, you know, to ring around the rosy, right. You know, the 14th to 17th centuries, I mean the kid's song it's about the black plague. You fast forward a couple of centuries, you know, the 1940s to early 1990s, there was the cold war.
Speaker 2 00:02:15 You know, there was a global thermal nuclear warfare, uh, the nineties to two thousands, we were plagued with a fear of, uh, terrorism and, you know, we'll be welcomed in the 2000 twenties with a viral pandemic. So I think that that fear of the unknown is a huge part of this. Um, and I don't wanna go off on too much of a tangent on that because we want to talk about IOT, but I think there's a great read out there for, for folks that are looking for some, I'll give a, just a plug for this gentleman's book, Dave Ropack, he's actually a Canadian, uh, it deals with bias and the name of the book is how risky is it any way? And it's a great walk through it. Doesn't take one side or the other, but it's a great stroll down through how to humans perceive risk, whether that's a fear of failure, a fear of the unknown is a large part of it.
Speaker 2 00:03:04 And then how do their biases play into that? You know, whether their own personal perspectives and their own beliefs. So I think we're, we're struggling through a lot of that. I mean, it's affected the way we eat, the way we interact, the way we make physical contact, or we don't make physical contact, you know, at least for a six foot, uh, distance. Uh, I think the, the approach to the brick and mortar workplace is going to train to drastically and it already has, uh, you know, the way we value our time and, and the illusional misnomer of a work-life balance, I think has changed a lot. Um, you know, when I look at, you know, crisis response or emergency response, emergency preparedness, you know, these ideas are not, they're not new, right? I mean, organizations have always had plans around, um, how do we deal with a crisis, whether it's a media-related crisis, something went wrong in the plant, something went wrong in the factory, but I would venture to say that, uh, there are very few organizations out there that had a pandemic response built into their plans or their mitigation efforts. Um, you know, you hear a lot of times recession-proof businesses have been, you know, the Holy grail of something for organizations to pursue for a long time. Uh, but I think, uh, a new twist on that is going to be, how do you create a pandemic proof business? And I'm not sure any organizations that had t --

-- he foresight to proactively prepare for that. You know, if you flashback six months ago, let alone even further
Speaker 1 00:04:28 <inaudible> we had those, we had those warning signs too, in the past, like things that would say to you, you know, you might want to get ready for this. We had SARS and we had like, all those other things that happen that went, you know, you might want to think about this germ thing. Right. Um, but, but people didn't, people didn't do adjust. So now, and I don't want to stay on this future thing. I do want to get to the IOT stuff, but I mean, what does this mean? And this is like on a global scale, like, what does this mean for, for our connected world for, I mean, this is a manufacturing podcast, what's it going to mean for manufacturers who know, I gotta make my products, if I'm going to stay in business and people want them pandemic or not?
Speaker 2 00:05:15 Well, it's a foundational question right now. Right? You have to be able to lead change through something like this. So if you even go back to the John Kotter's eight steps for leading change, there were warning signs, but let's face it we've been facing, you know, healthcare issues or an infection issues for a long time. And we just mentioned a couple of them. So I don't know what, you know, what the shot across the bowel was in this particular instance, the catalyze, this, this level of change or awareness or call to action if you will, but, but it's here. So you need to create that sense of urgency and then build your guiding coalition through that. I think we're starting to see this start to transpire across bunch of different sectors. I mean, if you look at the food sector, you know, if you're in the restaurant business, I think it's a dangerous and slippery slope.
Speaker 2 00:06:04 If you haven't pivoted and adapted yet to figure out how am I going to change my business model, if it's wholeheartedly set around the ambience and the experience of my local brick and mortar. I don't know that that's, that's a tough one to swallow. Um, you know, in terms of manufacturing and supply chains. Um, Oh, good Lord. I mean, think McKinsey. I mean, if you take some of the statistics that they've pulled recently, there are over 8.4 billion devices connected worldwide that's with a B. So that's, that's a lot of things that are talking and interacting and generating data. There's over 700 IOT platforms that are in existence today. Not in the staggering one to me is 90% of the world's data was created in the last three
Speaker 3 00:06:46 Years. You're kidding.
Speaker 2 00:06:49 Yeah. It's a crazy statistic. Right? And then you throw in, how is this being adapted and changed? And you take, you know, one of the pioneering organizations is driven change in the retail side for Amazon, right. You know, there's over a hundred thousand Kiva robots that are currently in use by Amazon across 26 different distribution centers. So those are some pretty crazy numbers. If you start to think about them and reflect on them, um, in terms of global markets, industrial automation is, is slated to be a 100 to $150 billion global market. Uh, Tokyo networks did some great research on this recently, uh, global edge in AI, artificial intelligent hardware and software. They're currently about 720 million in 2020, that's projected to grow to 2.2 billion by 2025, several others and, you know, machine condition monitoring and the world in, into the grassroots of manufacturing, right? It's predictive maintenance.
Speaker 2 00:07:45 It's how do I, you know, monitor and prevent that proverbial failure before it happens to be less than downtime, optimize your performance machine condition, monitoring 3 billion to 4 billion global market, industrial anomaly detection. You know, how do I figure out if something's starting to go awry? Once again, that's a two to $3 billion global market and predictive maintenance, you know, same thing, the trifecta two to $3 billion global market. So there's a lot going on, uh, that's this change is catalyzed and this was in motion before, but literally it was a catalyst. I think this is driving a lot of these organizations to reflect on what they're doing. You know, how do we operate and how do we change that moving forward? Because you know, the status quo is not going to cut it. I can't even get people into my organization to make them my widget, whatever my widget happens to be or service --

-- my widget to go into somebody's house, if it's on the consumer side of
Speaker 3 00:08:36 It.
Speaker 2 00:08:39 So there's a lot of, a lot of change going on right now. Um, 78% of engineering organizations surveyed expected the IOT products within the next three years, 78% of groups that are out there are going to be embarking on some type of internet of things, you know, according to IDC journey. So,
Speaker 1 00:08:58 So was that something that, um, was set in motion before the pandemic, or is that a statistic since the pandemic came where people are like, because we've talked about industry 4.0 and all of this stuff in the past, but there have been manufacturing companies been very, very slow to make a change and all of a sudden, maybe now they realize like, wow. And so I'm wondering about that statistic, when's it all. When did it all really kick?
Speaker 2 00:09:26 It's a good question. I don't know specifically, but I would venture to say that that statistic was already set in motion before the pandemic, but what the pandemics going to do is it's going to, it's going to drive that it's going to cause it to accelerate. And that acceleration, I think, is what we're starting to see. Um, there's, there's some fascinating things that are going on. And you know, my, one of the perspectives that I look at is it's, it's a shift from human interaction or in human interaction from doing to managing and maintaining things to do. And the whole workforce side of this I think is, is a fantastic topic. And we can, we can come back to that if, if we have time, um, one of the areas that I think there's some tremendous growth and, uh, energy being focused on it's, it's that cross-pollination between gamification and industrialization to drive and expedite digitalization.
Speaker 2 00:10:15 So when you look at a lot of the organizations that are out there now, there, you have the, this world of gaming, right? Our, our children and our grandchildren and all those folks, they have more devices that we can probably remember names, zone that they're interacting and they're interacting online globally. So, but that technology that's in there, if you've checked any of it out recently, there's a lot going on in virtual reality, augmented reality is starting to creep in. And when it's already in the consumer marketplace, you know, that there's several steps ahead, you know, in the industrial side, as well as you know, in the, um, I'll call it the military or the government sector side of things. So I think you're going to look for a lot of synergies coming to play between how do you leverage what's going on in this world, which generally wasn't speaking, wasn't connected to, you know, the manufacturing side of things. And you're going to see a lot of that collaboration to just short circuit and expedite development and innovation.
Speaker 1 00:11:10 I want to talk about because I mean, you brought it up, but that, but the people and, and the connecting the people in the machine and how you, like, we've had a situation where, well, let me step back a bit. I talked to a guy a week ago and his factory, uh, we're down to 30% workforce, but they posted 30% growth and it with 30% of the workforce, and I asked him how he did that. And they just said, really be focused really, this really, that, um, they seem quite automated and everything, but there's going to be this, this shift where we're going to realize that we can't have that many people in the factories. If this pandemic thing continues, right. If, if this is one pandemic and then there's another or something else, so we need to figure out how to keep people employed, but doing something different with these machines. And I guess that opens that can of worms about training and everything else. Right?
Speaker 2 00:12:11 I think it's it. It's training. It's, cross-training, it's, it's trying to figure out how do I leverage resources that I have, and I have a great example of this. Uh, one of the organizations that we've, uh, we've dealt with before, it tastes something as simple as the printer area, you know, they even embarked on a journey where they've implemented a platform approach, more of a standardized approach to their embedded, their software development by doing that, they were able to Forex their new product development time. So if they turned out one new product a year, they're able to take up to four products a year by --

-- standardizing on that type of a platform approach, which is, you know, at the heart of industrial IOT development work for anything, that's got a computer that's telling something else what to do from a manufacturing standpoint, how did they do that?
Speaker 2 00:12:58 It freed up resources. So they took people that were historically working on troubleshooting and solving problems from a coding in a programming standpoint, it freed them up to go out and do other things. So you weren't bogged down in doing system maintenance and in a lot of different things that were going on there. So that whole concept of automating your processes, let the machines, let the, uh, the artificial intelligence do a lot of these. I don't wanna say mundane, but a lot of these resources that were resource intensive requirements that took a human to do before. So I don't. And they did that. Mind you without a reduction in workforce. So they didn't lose anyone in this effort. They just redeployed them somewhere else. So I think that's, that's a key facet of what we're seeing happen is how do you leverage that? How do you redeploy?
Speaker 2 00:13:46 How do you, to me, it's not a question of, Oh my gosh, what's the job loss going to be from that, that that's a political mindset. It's how do you use that human capital in a better, more efficient manner to drive the optimization throughout your enterprise, whatever that enterprise is doing, whether it's food, you know, I know I keep coming back to food, but it's one that touches on people a lot. Right? Well, if, if your critical success factor is, is someone greeting that person at the door taking an order, but now you have an exposure issue. How do you eliminate that? I mean, if you're the CEO of a major food chain, that's gotta be top of mind right now.
Speaker 1 00:14:19 Yeah, well, yeah, like, and so you're, you're talking about the food industry. And so the other day, I'm at the grocery store and you know, now everybody is calling in and ordering all their food online. And so you see all the staff, people pushing these huge carts around gathering all this food, and I'm thinking, you know what, there's a big warehouse in the sky somewhere. That's got robots doing all of that. Right?
Speaker 2 00:14:45 Absolutely. Yeah. There's a lot of that's there,
Speaker 1 00:14:50 There's no reason people to, to be actually doing that. If you look five years down the road, how many of these huge grocery chains, like I'm thinking in this dates like Kroger and whatever, aren't looking at it and going, okay, we need a massive warehouse with these robots we program in what they got to go and pick up. And they're just going to go and cherry pick all of the products and they're going to be sitting there for whether it's a human or not to push it out to the person who comes to pick it up. Right.
Speaker 2 00:15:19 Absolutely. I mean, I think there's going to be a lot more of that. Just it's it's going to be automated. Right. You know, you're, you pull up to a drive through, you don't need a human there anymore. You know, it's w what are you doing? You probably need the human note in the background, making sure the equipment's running properly, programming the equipment. So with once again, it's that transfer of responsibility or role to some extent. And that's where I think education will come in into play hugely. How do you do that pivot? Because it's an interesting to me, and this is just a personal observation. You hear about jobs and job creation and all of these different statistics that get thrown out, especially in politically active times of the year. Like we are in the States right now, but you still see help wanted signs. You still see, you know, advertisements for people. And, and you hear about, you know, what are the one of the top three or four factors, even in several surveys that I've seen come out, finding talent, skilled talent. So there's still a labor requirements out there. It's just, you have to figure out how do you transition and parlay people into those roles as they're evolving,
Speaker 1 00:16:26 I guess one of the things about, um, industry 4.0 in the manufacturing sector always came down to cost. What's it going to cost me to make these adjustments to my business? Well, we've seen the impact of what can happen if you don't make those changes, what that cost is. But if everybody suddenly realizes, wow, we all have to make chang --

-- es. This is going to bring the cost of doing this sort of thing down. That's my guess. You tell me,
Speaker 2 00:16:57 I think it will eventually, uh, it's most, most organizations when they look at, at least from what we've heard and you talk to multiple companies out there, they'll hide out. Some of them are already engaged and they're pretty far down this path. Others are just thinking about it. You know, now more and more frequently than not, well, it's focus, right? How do you start? You know, don't eat the whole elephant at one time or the whole Apple at one time, as they say, you need, you need to make an observation of your business and where's the need. And when you find that need, that's what drives the business case around it. So you need some in start small, you don't need to start large. Most of the effective organizations that have done this, they don't go through and do a general organizational sweep and just start dropping in technology everywhere.
Speaker 2 00:17:42 And there has to be a reason to do it. It's, you know, sustainability, uh, has always been, had this green. And I, I, I prefer to look at it to say, it's, it needs to make sense. It needs to be specific stainable for your business. If your business is sustainable and it's a green. Yeah, absolutely. Then that will work. But it's really hard to drive sustainability issues. If there's no positive motivation, hide it financially because most business enterprises are in business to make money. So they have to sh shop smartly within the organization and say, where can we drive efficiency work? Where do we have a, we have a problem. And then how does technology solve that problem? And then build off of that case. You do that little trial balloon, and then you traveled in it larger, and then you do a beta test and then it gets bigger. That's what we've seen. That's worked fairly well, at least in the organization that we speak to. Yeah.
Speaker 1 00:18:31 You used to last year, or prior to last year, you used to travel a lot. Greg, you were going to conferences. You were, you were out there, you were seeing a lot of different things. You've been sort of, probably in your home office for the last 10 or 12 months, just like everybody else. How have you seen, um, just the people that you've talked to change their businesses?
Speaker 2 00:18:57 I think a lot. Well, you've had to right it's case in point. I mean, you travel, you do whether it's trade shows or it's client visits. Um, that is just for the most part. It's not permissible right now, unless it's something that's absolutely necessary or fundamental. So the travel has been chopped. Uh, zoom is a huge platform, right? It's people didn't know what zoom was, do your, your opening comment. And now you've got people that, uh, are barely computer literate, they're expert zoomers and they're out there talking to, you know, folks in their families and organizationally. Um, I think that, I think the pendulum will swing back eventually, but you have to be able to adapt to that. So if you've got a marketing budget, so you've got a million dollar marketing budget for your organization, and half of that is allocated to trade shows. Well, we're not going anywhere. You're just going to not market your business.
Speaker 2 00:19:47 What do you do, right. I mean, you have to adapt. So, you know, you've seen this huge influx in, in, in virtual events, virtual conferences, um, not just for calls but actual sites and there's larger platforms where you can do a virtual trade event, if you will. I think it's been a good substitute for short term, even to medium term, but I don't, I don't know that it fundamentally replaces human human interaction. I mean, if you've probably been to enough trade events, that there's a lot of those, those social hours or the happy hours where you know, that one-on-one contact with people is what drives a lot of the evolution of the business side. And you don't get that through, uh, through digital platforms. So that's probably one of the challenges at least that I see for now. But if you go back to a comment that I made earlier and you say, okay, well, I almost view this. And I use zoom almost like you use Kleenex as a tissue reference, right.
Speaker 2 00:20:43 Where that platform happens to be, this is the 1.0, so start to factor in augmented reality, virtual reality. And I think in the next five years easily, you're going to start t --

-- o see much more interactive virtual platforms that are going to be at your fingertips to leverage where it's not just you seeing a picture where we can see each other's, you know, office or a boat in the background, but you get into a full virtual 3d environment. That capability is there. The capability's there. Now, it just needs to be parlayed into this. So I think that's going to be one of the things that maybe go to the 2.0 or the 3.0 version in the virtual side of things. My personal opinion. I don't think you'll ever replace the need for human human to human interaction because we are, we are creatures of social contact. And I think there that need is not being fulfilled right now, but I think we can do a lot better job of, of leveraging technology to get there.
Speaker 1 00:21:37 I was, you know, I was kind of thinking about that human to human interaction in that contact and how important it is to us. And just as a funniest side, where like we're in a total lockdown here in Ontario. And, um, I went out to shovel snow on the weekend. And so my neighbor was shoveling snow. And then the other neighbor was shoveling snow and we're all staying six feet apart, but we're all talking. And I remember like walking into the house going, Oh man, that felt good. And I went, was it the shoveling of the snow? And I went, Oh, it was the interaction with the other people, right. It's just really funny. Like we are social creatures and we need that.
Speaker 2 00:22:18 Yeah, you do a fundamentally needed it's, that's probably one of the largest challenges that that's resulted from this, this current situation we find ourselves in is how do you satisfy that piece of it? I mean, you love your family to death, but if you're, if you're kept up with them and cooped up in a room, you know, you need interaction with other folks too, are the people that don't have family that live with them if you live alone. Right. I mean, that's another challenge.
Speaker 1 00:22:39 Yeah. Um, we're almost out of time, Greg, and I don't want to take up too much of your time, but I want to talk to you about just, um, because you talk about a connected world and you deal with smart cities and whatever. I'm very curious to get your sense of what you think. And you talked about this earlier, but the need for brick and mortar and things like that. But you know, if you were, if you were to look at it and say, here's what I think is gonna happen in five years to the Xi, just our environment. What do you see
Speaker 2 00:23:11 Who, uh, you know, my crystal ball,
Speaker 1 00:23:14 Uh, no way, but yeah. I mean, you know, the technologies that, that are out there in the cities that are doing certain things, what, what do you, what do you picture?
Speaker 2 00:23:23 I think that if you look at, if you look at the smart city or I call it smart macro things, right, you've got smart cities, smart buildings, smart infrastructure. There's so much capability being developed in those areas right now. And I think one of the areas that you're seeing a lot of more in the, in the public view standpoint is the transportation side of things, right? You have, you know, you're, you keep hearing this flirting with autonomous vehicles or partially autonomous vehicles and candidly, a lot of people own autonomous vehicles now, or at least the first stage to that the Tesla got technology in there. And in a lot of the other manufacturers are evolving that as we speak too. So I think you're going to see a transformation there. I think there's a, there's a generational aspect you have to look at as well.
Speaker 2 00:24:06 And I think the fundamental view on transportation is shifting, you know, we grew up in an era where you couldn't wait to get a driver's license in the North American environment, right. That was the Holy grail, get my keys to the mom or dad's car and I'm free. Right. So, but I think that's shifted to more of a transportation has less of a personal appeal of something like a gauntlet to achieve. And it's just more of a functionality of why need to get from point a to point B. So it'll be interesting to see how that changes. And I think you'll see a shift and we've seen a slight shift in different cities, even out in the, you know, the West coast, whether it's Vancouver or California, where you've got these big metropolitan environments, they've leveraged public transportation a lot, a lot more than you have in --

-- the Midwest.
Speaker 2 00:24:57 And some of the other areas, I mean, Toronto is put in a tremendous amount of infrastructure over the past, I think, 15 years to train networks. So I, I look for a lot more connectivity from that perspective. I think you're going to hear more about Hyperloops from a macro standpoint, but a lot of that is going to be interplayed of, well, what's the true need to travel now. And you know, is there a, is there enough of a justification for enough people that want to move from LA to San Francisco and back in the same day, and they don't want to take a plane? Well, that number is probably decreased right now. Right? Will it come back? I don't know. I'm not quite sure, but there's a lot of work. I know there's several different cities and proving grounds for these types of technologies to where you're doing, whether it's the driving or just products that will be used in a smart city environment.
Speaker 2 00:25:46 So how do you develop these technologies and then how do you roll them out and then do that beta testing. So there's some exciting work being done there. So as long answer to a short question, uh, I think the, the availability of data is the biggest thing it's looking at. How do I figure things out? It's not just an interactive map, it's an interactive map that can make an appointment for me and it can take my personal data and I can pay for that. So those are the types of trends that you're going to see. And if I want to see what the smog indexes for that city, I can pull that data up in real time. So how that information is going to be digested and re manipulated and then pushed back out to people, I think is the exciting part to see.
Speaker 1 00:26:29 And I think the, the key backbone is the internet, right? And we've gotta be able to have that, that connectivity everywhere so that everybody can access that information, right?
Speaker 2 00:26:40 Yes, you're absolutely right. It's fundamental. You've got, you've got 5g. That's coming out. You have different areas of the country, at least in the United States. And I think in Canada too, where they're just doing statewide and Michigan's got a lot of activity going on there where they're driving pretty much the whole state to be wired and it's being driven at the state level. So whether that's broadband access points, 5g access points, but they're pushing it out to, to, you know, the farming community in some of the areas that are a little bit further than the necessarily smart city aspect of it, like a downtown Detroit or a downtown LA. So I think that that connectivity is the key piece and in a wireless environment that we have, that's continuously evolving. I think that that connectivity is going to be a certainty how quickly it rolls out. I don't know whether it's going to be two years, five years to be, have a fully connected 5g network. But when you have that, that gives you the capability to let all that that's that backbone or that river system, if you will, or for sending electrons one way and the other to try and leverage technology and data.
Speaker 1 00:27:39 I think it's interesting when you, you referenced that couldn't wait to get your driver's license. And I think, you know, when you, you mentioned that to me in the past, and I thought, yeah, like I remember that day, I got my driver's license. I went and I poked my head into all my friend's classrooms and went, you know, I got in the car man, but I think what happens now is that we all have these smartphones, kids have these smartphones, they have a computer they're connected, we needed, we needed the vehicle so we could get to our friends. And now they're already with their friends connected with these electronic devices. So yeah, it's, the world is shifting at a, you know, a crazy and rapid way. And, uh, well, it's, anybody's guests to see what happens, but you've painted an interesting picture anyway, Greg.
Speaker 2 00:28:30 Oh, thank you. Thank you for having me. I appreciate it, Jen. It's always pleasure.
Speaker 1 00:28:34 My pleasure. And I actually like to check in with you again and have Kevin on, um, when he's available so that we can actually really talk deeply about like the manufacturing factory to see how it can actually be transformed and get your take on some of the things that you know are out there, because I think that would be a fascinating conversation, but, uh, we kicked off the year. We --

-- ll with some pretty good ideas, I think.
Speaker 2 00:29:01 Great. Looking forward to it.
Speaker 1 00:29:02 Yeah. Great. Thanks Greg. So Greg Greg Orloff is with IIoT world where he is the senior analyst and chief business development officer and the make it right. Podcast is brought to you by Kevin Snook is a leadership advisor and author of the bestselling book, Make It Right. Five steps to align your manufacturing business from the frontline to the bottom line it's available on Amazon. And if you want to listen to you, make it right on a regular basis. You can always subscribe on iTunes, Google play, Stitcher, Spotify, and YouTube that is make it right.I'm Janet Eastman thanks very much for joining Greg and myself and have a great week. --